Massachusetts School of Optometry

Bulletin of Information

1949–1950

BOSTON,
MASSACHUSETTS

CORRESPONDENCE

All correspondence should be addressed to
Registrar, Massachusetts School of Optometry
285 Huntington Ave., Boston 15, Mass.

Massachusetts School of Optometry

Founded 1894

BULLETIN OF INFORMATION

Administrative Offices:

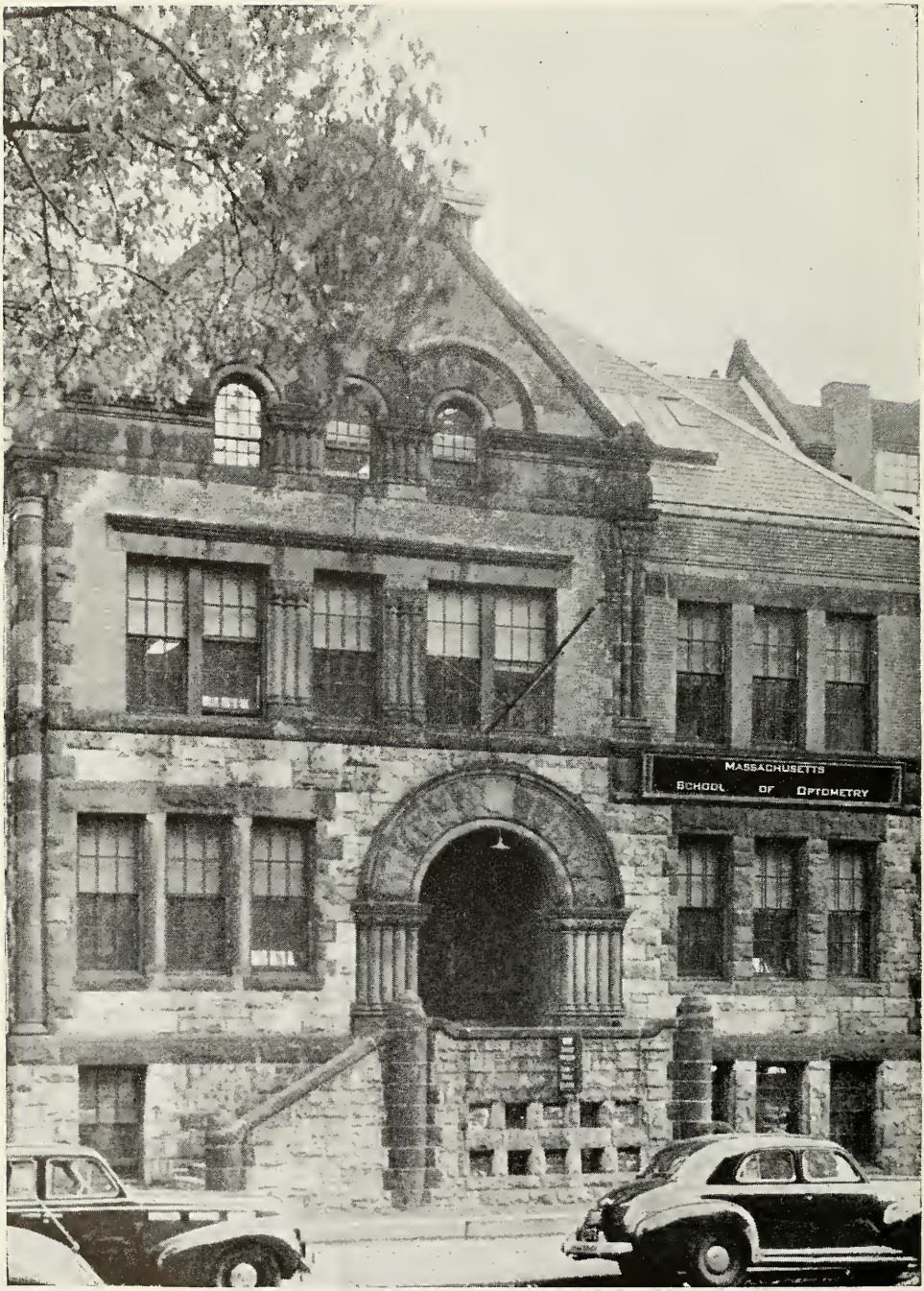
285 HUNTINGTON AVENUE, BOSTON 15, MASSACHUSETTS

Lecture Rooms and Laboratories:

285 HUNTINGTON AVENUE, BOSTON 15, MASSACHUSETTS

Massachusetts Optometric Clinic:

472 COMMONWEALTH AVENUE, BOSTON 15, MASSACHUSETTS



Horace Mann Building

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The Profession of Optometry

Optometry is the science of sight. It is defined as the science and art devoted to the examination of the eyes, the analysis of ocular functions, and the employment of preventive and corrective methods and agents for the relief of visual and ocular anomalies.

Optometrists are trained to realize that the eyes are not merely optical instruments but in every sense members of the human body. Knowledge of the eyes cannot remain apart from knowledge of the body. An adequately trained optometrist must be an expert in all matters pertaining to vision and must have a knowledge of ocular anatomy, physiology, and pathology.

The great service rendered by the optometrist is to enable the patient not only to see clearly, but also to see with comfort and efficiency. To this end the optometrist is trained:

1. To ascertain the absence or presence of visual anomalies and to adapt lenses to correct, remedy, or relieve abnormal conditions.
2. To determine the presence or absence of abnormal conditions in focusing and fixating at near distances and to adapt remedial measures to correct, remedy, or relieve these abnormal conditions.
3. In the adaptation of lenses and prisms and the use of orthoptic training or other coordinating exercises to correct, remedy, or relieve the effects caused by any defect or abnormal condition of the eye or of the two eyes in associated vision.
4. In the development and re-education of the visual skills, thus increasing visual efficiency and rehabilitating many who otherwise would be handicapped.

Organization and Purpose

The Massachusetts School of Optometry was established in 1894 as the Klein School of Optics by the late August A. Klein, M.D. In 1909 the Massachusetts School of Optometry was founded and conducted under the leadership of the late Theodore F. Klein, O.D. The School is chartered by the Commonwealth of Massachusetts and administered by a board of trustees as a non-profit co-educational institution for the advancement of optometrical education.

The course offered by the Massachusetts School of Optometry extends over a period of four academic years; the curriculum is planned to train the students for the practice of optometry, to indoctrinate them with the ideals of the profession, and to equip them for successful and ethical practice.

Standing of the School

The Massachusetts School of Optometry is accredited by the Council on Education and Professional Guidance of the American Optometric Association. It is approved for training veterans under Public Law 16 and Public Law 346.

The School is a charter member of the Association of Schools and Colleges of Optometry.

School Buildings

In October, 1948, the Trustees of the Massachusetts School of Optometry purchased from Boston University the Horace Mann Building. This building, located at 178 Newbury Street, near Copley Square, is a four-story brick structure adequate to house the administrative and faculty offices, the library, the classrooms, the physics laboratory, the optics laboratories, the anatomy and physiology laboratories, the zoology laboratory, and the pathology laboratory.

The clinical building, a five-story brick structure at 472 Commonwealth Avenue, Kenmore Square, houses the office of the President, the clinic, the chemistry laboratory, the optometry practice laboratories, and the mechanical optics laboratory.

Clinics

The Massachusetts Optometric Clinic is a department of the Massachusetts School of Optometry. The clinical building, located at 472 Commonwealth Avenue, in the heart of Boston's medical center, is especially well-adapted for clinical practice.

The clinic is equipped with a variety of modern instruments enabling the senior students, serving as internes, to become familiar with all types of optometrical instrumentation.

The following clinics are maintained: refraction, visual training and orthoptics, visual field study, ocular pathology and subnormal vision. Numerous social agencies in Greater Boston refer patients to the clinic for complete eye and visual service.

In addition to the regular out-patient clinic, senior students attend clinics at the Refraction Department of the Boston Evening Clinic and Hospital and at the Orthoptic Department of the Boston Dispensary, and conduct visual-screening surveys in schools, industries, institutions, and community centers.

Libraries

The library of the Massachusetts School of Optometry contains the essential reference books in the basic, biological, optical, ophthalmological,

Histology Laboratory Class

Chemistry Laboratory

and optometrical sciences, as well as in general medicine, together with a collection of reprints and current periodicals.

The library is open to students, with a librarian in charge, daily from 9:00 a.m. to 5:00 p.m. and Saturdays from 9:00 a.m. to 12:00 noon. Students may borrow books according to library regulations.

Students also have access to the facilities of the Boston Public Library and the Boston Medical Library for general reference and study.

Admission Requirements

The minimal requirement for admission is the satisfactory completion of one year of study at an approved college or junior college of arts and sciences. A total college credit of at least 30 semester hours is required and must include the following courses:

English Composition	6 semester hours
Mathematics	
College Algebra	3 semester hours
Plane Trigonometry	3 semester hours
General Biology	6 semester hours
Inorganic Chemistry	6 semester hours

The remaining courses necessary to make up the required number of credits are elective, preferably in cultural subjects.

These formal requirements are necessary and desirable as they provide all entering students with a common ground upon which the first year of the school curriculum can be based. Academic credits alone are not an adequate indication of a student's ability to profit by professional education. Consequently, the Committee on Admissions and Promotions takes into consideration aptitude, personality, and mental ability. In this way the School seeks to select for its student body those who not only meet the academic requirements for admission but also give promise of acquitting themselves creditably in the training program and of being useful members of the profession of optometry after graduation.

Admission to Advanced Standing

Advanced standing to the second year may be granted, provided vacancies occur, to applicants who have completed and received credit for courses comparable to those given in this institution in the first year. No credit will be granted for courses in which a grade lower than "C" was received.

An applicant transferring from an accredited college of optometry, in which he is eligible to continue, may receive credit for equivalent courses

toward the work of the second year, on the basis of an official transcript. An applicant so admitted must satisfactorily complete the work of the last two years in residence at the Massachusetts School of Optometry.

Procedure for Admission

There is only one entry date each year for new students.

1. Application for admission is filed on forms provided by the School, together with a small unmounted photograph of the candidate.

2. A complete record of high school and college work completed is sent directly from each institution attended. All credentials become the property of the School and are kept on permanent file.

3. Each candidate is required to have a complete physical examination, a report of which is submitted to the School.

4. Credentials submitted for entrance are evaluated by the Committee on Admissions and Promotions, which reserves the right to reject any applicant.

5. Candidates for admission are required to take written tests in three areas: mental ability, vocational interests, and personality. Candidates are personally interviewed by an admitting officer.

6. Upon notification of acceptance applicants are required to submit the matriculation fee of $10 (not refundable) in advance of the registration date.

7. Every student is required to report in person at the School on the dates specified for registration.

Withdrawal

A student in good standing is entitled to honorable withdrawal at any time. But if a student ceases to attend classes during the school year without communicating with the Dean, his record will be marked to indicate failure in all courses for the semester in which he has absented himself. A student desiring to withdraw from the School should therefore request permission to do so from the Dean.

A student who has been granted an honorable withdrawal from the School may be reinstated subsequently, provided not too long a time has elapsed and provided further that changes in the curriculum do not render such readmission impracticable. Decisions in all cases rest with the Committee on Admissions and Promotions.

No student under the age of twenty-one shall be entitled to an honorable withdrawal without the assent of his parent or guardian furnished in writing to the Dean.

Fees

Tuition Fee: $400 per academic year
Matriculation Fee: $10 (payable once on entrance)
Microscope Fee: $5 per year (not refundable) (Students owning microscopes are permitted to use same in microscopic laboratory courses.)
Publication Fee: $2 per year
Student Physical Examination Fee: $5 (payable only once by new students)
Special and Retake Examination Fees: $2 per examination
Clinical Laboratory Fee: $10 (payable by senior students only: one half at the beginning of each semester)
Transcript of Credits: $1 (each copy after the first)
Graduation Fee: $15

Refunds

The School provides all instruction and accommodation on an academic term basis; no refunds are granted except when students are compelled to withdraw because of personal illness or to enter the armed forces of the nation. When a refund is credited for withdrawal in good standing, such refund is computed from the day upon which the written request for permission to withdraw is received. Dishonorable dismissal or expulsion does not entitle the student to a refund.

Personal Equipment and Textbooks

Each student is required to purchase for his individual use all the prescribed materials, textbooks, instruments, and equipment at an estimated cost of $78 in the first year, $150 in the second year, $93 in the third year, and $75 in the fourth year.

The faculty reserve the right to make such additions and changes in the list of prescribed textbooks, instruments, and equipment as are deemed advisable.

Grades

Examinations are held at the end of each semester. Grades in lecture courses are reported in the form of percentages, which are interpreted as follows:

90 — 100	Excellent
80 — 89	Above average
70 — 79	Average
60 — 69	Condition
Below 60	Failure

In laboratory courses, the only grades reported are Incomplete and Complete.

No grades are issued to a student before he has discharged his financial obligations to the school.

Promotion

The Committee on Admissions and Promotions is charged with the responsibility of evaluating the scholastic achievement of all students. Grades for the first semester are primarily indicative of the progress each student is making. Promotion is based on final grades for the year's work.

1. A student failing in any course or conditioned in three courses is dismissed.
2. A student conditioned in two courses is required to take comprehensive examinations in such courses.
3. A student conditioned in one course is permitted to advance to the next year on probation.

Any student who has in the opinion of the Committee on Admissions and Promotions definitely proven his inability to fulfill the academic requirements of the School is dismissed.

Conditions Leading to Graduation

All candidates for graduation must be approved by the Committee on Admissions and Promotions as having met the following requirements:

1. Credit for all courses in the curriculum must be earned by regular enrollment and attendance in this school or by transfer of credits satisfactorily earned in an approved educational institution.
2. All clinical assignments must be completed.
3. Because of the differences of curricula of colleges of optometry, the last two years must be successfully completed in this School.
4. All financial obligations to the School must be met.
5. All rules and regulations of the School must be complied with.

Requirements for Practice

Inasmuch as the optometry law of each state fixes the requirements for examination for licensure, it will be well for the prospective student to acquaint himself with the requirements of the state wherein he intends to practice. This information may be obtained by communicating with the secretary of the examining board in optometry.

Policy on Changes of Program

The School reserves the right to withdraw, modify, or add to the courses offered or to change the order or content of courses.

The School reserves the right to change its tuition fee and other fees,

the requirements for graduation, and other regulations. No change in fees will become effective, however, until the school year following that in which it is announced.

Any changes in policy will be applicable to all students in the school, including former students who may re-enter.

Honors and Prizes

Graduation with honors is conferred upon students in the graduating class for distinguished scholarship. Students who have earned a grade average of from 95 to 100 receive Summa Cum Laude; those who have earned a grade average of 90 to 95 receive Magna Cum Laude; and those who have earned a grade average of 85 to 90 receive Cum Laude.

THE THEODORE F. KLEIN MEMORIAL PRIZE

Each year the Board of Trustees of the Massachusetts School of Optometry offers a prize of $200 to that member of the freshman class who achieves the highest scholastic average in all courses of the freshman curriculum.

THE JOSEPH J. SCANLON PRIZE

This prize is made available annually by the Zeta Chapter of the Omega Epsilon Phi Fraternity to that member of the senior class who has the best record for efficiency in the conduct of clinical work.

THE LESTER J. EPSTEIN PRIZE

This prize is made available annually by the Pi Omicron Sigma Fraternity to that member of the senior class who achieves the highest grades in theoretical and applied optometry.

VALEDICTORY PRIZE

This prize is made available annually by the faculty of the Massachusetts School of Optometry to that member of the senior class who achieves the highest general average in the four years of work.

Student Activities

STUDENT COUNCIL. The Student Council is an organization of representatives chosen by the students according to the terms of a constitution duly drawn up and adopted by the student body. The Council serves with a faculty advisor in the consideration and solution of problems presented to it by the administration and by the students. The Council has been most successful in its work of serving both the students and the administration in establishing and maintaining cooperation and good spirit.

PUBLICATIONS. The *Scope*, a monthly publication prepared, edited, and published by the students with the counsel of a faculty adviser, contains technical articles, school and social news, and other matters of interest to the student body.

The annual year book, *Reflections*, is published by the graduating class. It contains the class history, pictures of all the graduates, of the faculty, and of undergraduate groups, as well as a miscellany of snapshots and subjects of interest to the graduates.

FRATERNITIES AND THE SORORITY. There are at present two Greek-letter fraternities and one sorority. Each organization is provided with a faculty adviser who is responsible for the proper administration of its affairs. Elected representatives from each organization make up the Pan-Hellenic Council, a body which has preliminary jurisdiction over fraternity and sorority regulations.

CLASS ORGANIZATION. Each of the classes elects its own officers and carries on activities as a class. Social functions are sponsored by the classes throughout the year. The senior class plans a number of activities just prior to Commencement.

CURRICULUM*

First Year

First Semester	*Class*	*Lab.*	*Second Semester*	*Class*	*Lab.*
General Physics	4	2	General Physics	4	2
General Psychology	2		General Psychology	2	
Analytical Geometry	3		Calculus	3	
Organic Chemistry	3	3	Organic Chemistry	3	3
Invertebrate Zoology	4	2	Vertebrate Zoology	4	2
Optometrical Orientation	1		Optometrical Orientation	1	
Introduction to Semantics	2		Introduction to Semantics	2	
	19	7		19	7

Second Year

Physiological Optics I	4	2	Physiological Optics I	4	2
Geometrical Optics I	4	2	Geometrical Optics I	4	2
Ophthalmic Optics I	3	2	Ophthalmic Optics I	3	2
Abnormal Psychology	2		Visual Psychology	2	
Human Anatomy and Physiology	3	2	Human Anatomy and Physiology	3	2
Theoretical Optometry I	3	2	Theoretical Optometry	3	2
Physical Optics	2	1	Illumination	2	
	21	11		21	10

Third Year

Physiological Optics II	3	2	Physiological Optics II	3	2
Geometrical Optics II	3	2	Geometrical Optics II	3	2
Ophthalmic Optics II	3	2	Ophthalmic Optics II	3	2
Ocular Anatomy and Physiology	3	1	Ocular Anatomy and Physiology	3	1
Theoretical Optometry II	5	4	Theoretical Optometry II	5	4
General Histology	2	2	Ocular Histology	2	2
General Pathology	2		General Pathology	2	
	21	13		21	13

Fourth Year

Physiological Optics III	1	1	Physiological Optics III	1	1
Ophthalmic Optics III	2	2	Ophthalmic Optics III	2	2
Embryology	2	1	Contact Lenses	1	1
Medical Ophthalmology	2		Medical Ophthalmology	2	
Theoretical Optometry III	4	2	Theoretical Optometry III	4	2
Visual Training and Orthoptics	2		Visual Training and Orthoptics	2	
Applied Optometry	3		Applied Optometry	3	
Ethics, Economics, and Jurisprudence	1		Ethics, Economics, and Jurisprudence	1	
Ocular Pathology	3	1	Ocular Pathology	3	1
Clinical Optometry		5	Clinical Optometry		5
	20	12		19	12

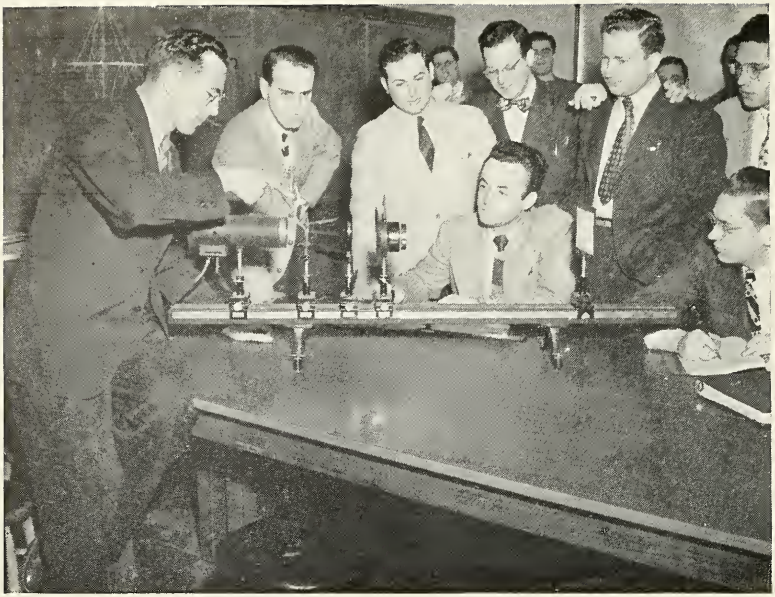
* Effective September 1949

Description of Courses

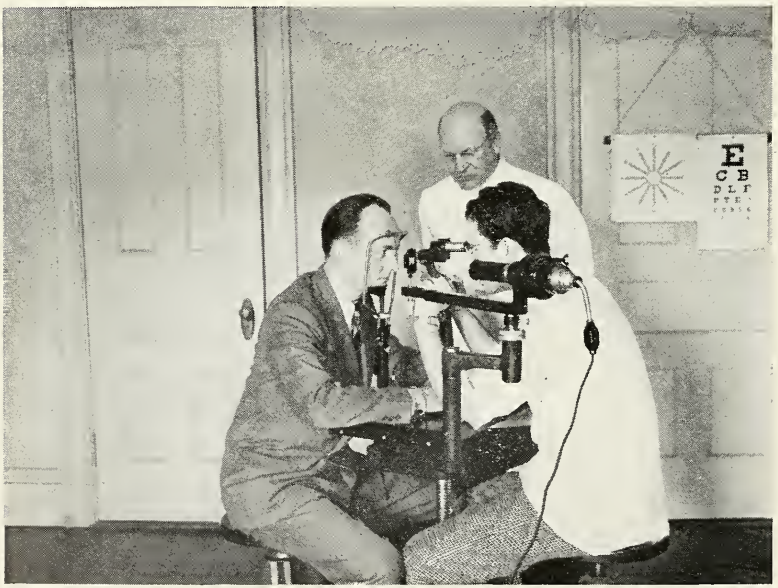
ANATOMY AND PHYSIOLOGY

General Anatomy and Physiology: This course includes the study of the essential features of human anatomy and physiology presented through lectures, practical demonstrations with prepared human specimens, skeletons, models, and charts. The course is supplemented by laboratory exercises including experiments and studies of blood circulation, measurements of blood pressure, blood physiology, and some blood chemistry, including the study of section currents by means of electrocardiographs, frog and turtle experiments, experiments in physiology of nerves and muscles, action of digestive enzymes, urinalysis. 3 hours lecture; 2 hours laboratory.

Ocular Anatomy and Physiology: The purpose of this course is to give the student a thorough knowledge of the anatomy and physiology of the eye and its appendages. It consists of lectures, demonstrations, lantern slides, charts, models, and dissection of animal eyes. 3 hours lecture; 1 hour laboratory.



Demonstration in Geometrical Optics



Slit-lamp Microscopy

General and Ocular Histology: The purpose of this course is to give the student a knowledge of general histology with a detailed knowledge of the structures of the ocular region. The cell and fundamental tissue are considered basic and of primary importance in general and ocular anatomy and pathology. The lectures are supplemented by laboratory work including the study of microscope and lantern slides. 2 hours lecture; 2 hours laboratory.

Embryology: Basic principles of general embryology are presented. Ocular embryology is presented in detail. Some of the topics included in general embryology are oögenesis, spermatogenesis, fertilization, the development of the primary germ layers, the development of the brain cavities and nervous system, foetal membranes, the embryological development of the various structures of the eye. Emphasis is placed upon ocular anomalies. 2 hours lecture; 1 hour laboratory.

BIOLOGY

Invertebrate Zoology: Representative invertebrate animals are studied in detail, with emphasis upon zoological principles and physiological functions. A general course in biology is prerequisite. 4 hours lecture; 2 hours laboratory.

Vertebrate Zoology: Representative vertebrate animals are studied in detail, with emphasis upon comparative anatomy and physiological functions. Basic principles of evolution, genetics, and eugenics are also included in this course. A course in general biology and invertebrate zoology is prerequisite. 4 hours lecture; 2 hours laboratory.

CHEMISTRY

Organic Chemistry: This is an introductory course dealing with the theories and principles of the chemistry of typical organic compounds. Laboratory work includes the preparation of some of the more important fundamental organic compounds. This course presupposes a course in general inorganic chemistry on the college level. 3 hours lecture; 3 hours laboratory.

MATHEMATICS

Analytic Geometry: This course includes the study of points in rectangular and polar coordinate systems; distance, slope, angle between lines; loci; straight line, circle, conic sections; polar and parametric equations; tangents and normals; curve tracing; algebraic and transcendental curves; translation and rotation of axes, point, line, plane in space; quadric surfaces and sections. Adequate preparation in algebra and trigonometry is presupposed. 3 hours lecture.

Calculus: This course includes the study of the functions and func-

tional notation; slope of a curve; limits and limit theorems (without proof); the derivative; differentiation of algebraic functions; maxima and minima; rates and differentials; indefinite integrals; constant of integration; definite integral; area under a curve; differentiation of exponential, logarithmic, trigonometric functions; integration of exponential, logarithmic and trigonometric functions. 3 hours lecture.

OPTOMETRY

Optometrical Orientation: This course includes the history and development of optics and optometry, organization of optometry, optometry and humanity, trend of optometry, optometry's contributions to visual science, problems confronting optometry, objectives of optometry. 1 hour lecture.

Physiological Optics I: This is a study of the functions of the various parts of the eye associated with the phenomenon of vision, including refraction and refractive errors, theories of accommodation, mechanism of accommodation, astigmatism, the schematic eye, cardinal points, catoptric images, axes and planes of the eye, aberrations, entoptic phenomena, and the optics of ophthalmometry, ophthalmoscopy, and retinoscopy. The course is supplemented by laboratory exercises and demonstrations. 4 hours lecture; 2 hours laboratory.

Physiological Optics II: This is a continuation of Physiological Optics I dealing with the retina and retinal stimuli, including photopic and scotopic vision, after-images, Weber's law, Fechner's law, critical fusion frequency, color vision, theories of color vision, color blindness, extra-ocular muscles, binocular vision, heterophorias, strabismus, accommodation and convergence. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory.

Physiological Optics III: This is an additional study of binocular vision, including visual acuity and visual efficiency, visual projection, stereopsis, the Pulfrich phenomenon, stroboscopic motion, retinal images, eikonic magnification and a general review of Physiological Optics I and II. This course is supplemented by laboratory exercises and demonstrations. 1 hour lecture; 1 hour laboratory.

Thecretical Optometry I: This course is designed to prepare the student for actual clinical practice. The subjects presented are introductory in nature and serve to orient the student. The course includes nomenclature, terminology, definitions, measurement of vision, objective refraction methods, subjective refraction methods, check tests, contents of the trial case, ophthalmoscopy (supplemented by a large variety of lantern slides illustrating physiological and pathological variations from the normal), and the interrelationship of accommodation and convergence. This course is

supplemented by demonstrations and practice exercises in all phases of instrumentation and by clinical practice of tests. 3 hours lecture; 2 hours laboratory.

Theoretical Optometry II: This is a continuation of Theoretical Optometry I. It includes the study of refractive and muscular anomalies, accommodation and convergence reserves and relationship, external examining, history-taking, symtomatology, etiology, stereopsis, and visual skills. Special emphasis is laid on the important features of a complete examination by methods of optometry. This course is supplemented by demonstrations and practice exercises in preparation for actual clinical practice on patients in the clinic. 5 hours lecture; 4 hours laboratory.

Theoretical Optometry III: This is a continuation of Theoretical Optometry II. It includes the study of the philosophy of tests conducted in routine examining from the standpoint of diagnosis and corrective procedures, visual field study, strabismus, and special devices. 4 hours lecture; 2 hours laboratory.

Applied Optometry: Procedure in case analysis is covered, with particular attention to symptomatology, interpretation of the results of tests, syndromes, formation of diagnostic units, etiology, and corrective procedures. Clinical conference periods are devoted to the discussion and analysis of various cases examined in the clinic. 3 hours lecture.

Contact Lenses: This is a study of the history and development of contact lenses; description, methods of fitting and adjusting all modern types; impression-making; trial case techniques; corneal type. 1 hour lecture; 1 hour laboratory.

Ophthalmic Optics I: This is a study of the classification and description of ophthalmic lenses; physical characteristics of single vision lenses; prisms; decentration, neutralization, transposition and axis marking. Laboratory practice includes classification of lenses, axis marking, neutralization, decentration and edging. 3 hours lecture; 2 hours laboratory.

Ophthalmic Optics II: This is a continuation of Ophthalmic Optics I and includes the theory and use of Mechanical Optics laboratory instruments; anisometropic imbalances; facial measurements and principles of adjusting glasses to the face. Surface grinding procedures are described, including lining up and calculating for lens thicknesses. Laboratory practice includes advanced edging, assembling of zylonite and metal frames, and lining up of prisms. 3 hours lecture; 2 hours laboratory.

Ophthalmic Optics III: This is a continuation of Ophthalmic Optics II and includes the consideration of special lenses including iseikonic, corrected, high-index glass, absorption, and safety glasses. Bifocal and trifocal lenses are discussed in detail from both a theoretical and a practical

standpoint. Laboratory practice includes assembling of lenses in rimless mountings; practice in facial measurements and adjusting of glasses to the face; use of mechanical optics laboratory instruments; lining up of bifocal lenses. 2 hours lecture; 2 hours laboratory.

Clinical Optometry: This is a course in clinical training under the guidance and supervision of experienced clinical instructors in making complete optometric examinations. Preliminary examinations and diagnoses are made by senior internes in the clinic on out-patients. The internes' observations and conclusions are verified and discussed by the clinical instructors. 5 hours clinic.

Visual Training and Orthoptics: This is a study of the history of orthoptics, visual skills routine and interpretation of results, visual training procedures in heterophorias and heterotropias, vision training in myopia, consideration of reading disabilities, training procedures in anomalous accommodative responses. 2 hours lecture and demonstration.

Optometrical Ethics, Economics, and Jurisprudence: This course includes the meaning of professionalism and the standards of professional conduct, a study of legal and ethical codes of optometry, problems of the legal and economic position of the optometrist, office practice, patient control, and inter-professional relationships. 1 hour lecture.

PATHOLOGY

General Pathology: This course acquaints the student with the fundamentals of general pathology, including bacteriology, immunology, and pharmacology. The subject matter includes the study of inflammation, repair, regeneration, retrograde changes, disturbances of circulation, contagious disease, chemical poisons, vitamin deficiencies, endocrines, blood studies, disturbances of growth, the nervous system, and the gastro-intestinal tract. 2 hours lecture.

Ocular Pathology: This course aims to give the student careful and detailed instruction in the recognition of pathological conditions of the eyeball and its appendages and in the differentiation between healthy and abnormal states. The didactic lectures are supplemented by observation of pathology cases as demonstrated in the clinic under the direction of a physician. The laboratory work consists of lantern and microscopic slides illustrating various pathological conditions. 3 hours lecture; 1 hour laboratory.

Medical Ophthalmology: The aim of this course is to give the student a thorough knowledge of the ocular manifestations of systemic disorders. The course includes such subject matter as infections and infectious diseases, tuberculosis, virus infections, fungus infections, focal infections,

drug and chemical intoxications, diseases of the nervous system, blood diseases, nutritional diseases, and diseases of the cardio-vascular system. 2 hours lecture.

PHYSICS

General Physics: This course covers the subjects of basic measurements, vectors, work and energy, laws of fluids, heat, magnetism, electricity, simple harmonic motion, wave motion, sound, and fundamentals of light. The laboratory experiments follow closely the lectures and class work. 4 hours lectures; 2 hours laboratory.

Physical Optics: This course includes theories of light, velocity of light, interference, diffraction, polarization, double refraction, and spectroscopy. The lectures are supplemented by demonstrations. 2 hours lecture; 1 hour laboratory.

Geometrical Optics I: This is a general introduction to the study of optics. It treats of the fundamental principles and methods of geometrical optics underlying such subjects as lights, shadows, photometry, laws of reflection and refraction, reflection at curved surfaces, refraction at spherical surfaces, prisms, infinitely thin lenses. The lectures are supplemented by laboratory exercises and demonstrations. 4 hours lecture; 2 hours laboratory.

Geometrical Optics II: This course is a continuation of Geometrical Optics I. It includes the study of Gaussian and Newtonian forms of lens equation, equivalence of thin lenses, optical instruments, entrance and exit pupils, resolving and magnifying power of instruments, thick lenses, thin-and-thick compound systems, thin and thick prisms, achromatic and aplanatic systems. The course is supplemented by laboratory exercises and demonstrations. 3 hours lecture; 2 hours laboratory.

Illumination: This course presents the latest theories and practices for proper illumination of homes, schools, factories, offices, etc. It offers a new method of calculating and rating a lighting system. 2 hours lecture.

PSYCHOLOGY

General Psychology: The aim of this course is to acquaint the student with the fundamental facts and theories of psychology. The course deals with a brief history of psychology and a survey of various schools that have contributed to psychology. This is followed by a study of the sensory, nervous and motor systems, drives, motivation, mental conflict, attending and perceiving, intelligence, learning and the formation of habits. The course concludes with a discussion of personality and its social setting. 2 hours lecture.

Abnormal Psychology: The purpose of this course is to make the student familiar with psychopathological states. Constant emphasis is placed on psychodynamics. The course begins with a brief history of psychopathology and the treatment of the mentally ill. This is followed by a study of the etiology, symptomatology and dynamics of the psychoneuroses, anxiety neurosis, conversion hysteria, the dissociations, affective neurosis, obsessive-compulsive and phobic states. Great stress is placed on the psychosomatic diseases. The course concludes with a discussion of the functional psychoses, the schizophrenias, manic-depressive psychoses and organic psychoses. 2 hours lecture.

Visual Psychology: This course is both applied and didactic. The student is expected to apply his knowledge of psychology to the field of vision. In addition to a study of the visual reaction system, visual perception, visual sensations and illusions of vision, the student is introduced to the relationship between visual anomalies and psychological factors. Psychological implications of myopia, strabismus, blepharospasm, ciliary muscle spasm, color blindness, amblyopia, and glaucoma are discussed. The student is expected to be able to evaluate and correlate the psychological and physiological findings. 2 hours lecture.

INTRODUCTION TO SEMANTICS

Students in this course will get a new orientation toward words and combinations of words through a consideration of the semantics of communication. This course is introductory to a field which is rapidly developing in area and in practical importance. Instruction provides a greater awareness of the power of words in more efficient and constructive human relations. The thesis maintained is that only a critical examination of words can lead to understanding the meaning of the thought, concept, idea, or thing symbolized by them. 2 hours lecture.

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